

Patent claims

1. A gas turbine (1) with a rotationally fixed inner casing (37) which is arranged concentrically with respect to the rotor (3) and through which a working medium flows, and which is formed from at least two rings (25, 26) lined up with one another, in each case so as to leave an annular gap (23) between two directly adjacent rings (25, 26) which have in each case, in the region of the annular gap (23), a collar (27, 28) extending in the flow direction of the working medium (20), which collars partially overlap one another, an annular sealing means being provided for sealing off the annular gap (23), characterized in that the sealing means is designed as a spring element (24) with a first end (34), with a second end (35) and with a spring region lying between them, and in that the first end (34) is secured in one of the two rings (26) in a circumferential groove (31) open toward the annular gap (23), and in that the collar (27) arranged on the other of the two rings (25) has, for the second end (35) of the spring element (24), an annular bearing surface (32) against which the spring element (24) bears, prestressed, so as to seal off the annular gap (23), while, in order to generate the prestress, the spring region is supported on an annular supporting surface (33) which is provided on the collar (28) of the one ring (26) and which faces the annular bearing surface (40).

2. The device as claimed in claim 1, characterized in that the inner casing (37) is designed to diverge conically toward the rotor (3) in the flow direction.

3. The device as claimed in claim 1 or 2, characterized in that the front ring (25), as seen in the flow direction, has the radially inner collar (27) and the rear ring (26) has the outer collar (28), so that, as seen radially, the annular gap (23) runs counter to the flow direction of the working fluid (20).

4. The device as claimed in claim 1, 2 or 3, characterized in that the first end (34) is sealingly connected as the fixed end of the spring element (24) to the circumferential groove (31) by welding or soldering.

5. The device as claimed in one of claims 1 to 4, characterized in that the annular bearing surface (32) is provided on that side of the radially inner collar (27) which faces away from the working medium.

6. The device as claimed in claim 5, characterized in that the spring element (24), of S-shaped cross section, bears sealingly with, as free end, its second end (35) lying opposite the first end (34) against the annular bearing surface (32).

7. The device as claimed in one of claims 1 to 6, characterized in that, outside the inner casing (37), a cooling medium can flow, the pressure of which is higher than the pressure inside the inner casing (37), and in that the spring action of the sealing means runs in the direction of the pressure drop.

8. The device as claimed in one of claims 1 to 7, characterized in that the front ring (25) as seen in the flow direction, forms the radially outer collar (27) and the rear ring (26) forms the inner collar (28), so that, as seen radially, the annular gap (23) runs in the flow direction of the working fluid (20).

9. A sealing means for a gas turbine (1), which seals off a gap delimited by two directly adjacent components, which components have in each case a collar in the region of the gap, which collars partially overlap one another, characterized in that the sealing means is designed as a spring element (24) with a first end (34), with a second end (35) and with a spring region lying between them, and in that the first end (34) is secured in one of the two components in a groove (31) open toward the gap, and in that the collar arranged on the other of the two components has, for the second end (35) of the spring element (24), a bearing surface against which the spring element (24) bears, prestressed, so as to seal off the gap (23), while, in order to generate the prestress, the spring region is supported on a supporting surface which is provided on the collar (28) of the one component (26) and which faces the bearing surface (40).

10. The sealing means as claimed in claim 9, characterized in that the first end (34) of the spring element (24) is connected unreleasably to the circumferential groove (31) by welding or soldering.

11. The sealing means as claimed in claim 9 or 10, characterized in that the spring element (24), of S-shaped cross section, bears, air-tight, with its second end (35) lying opposite the first end (34) against the bearing surface (32) of a component (25, 26).